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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR   | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------|---------------------|------------------|
| 10/054,542      | 01/22/2002  | Timothy Wayne Crockett | RPS920000103US2     | 7178             |

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EXAMINER

TRINH, MINH N

ART UNIT PAPER NUMBER

3729

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/054,542 | <b>Applicant(s)</b><br>CROCKETT ET AL. |  |
|                              | <b>Examiner</b><br>Minh Trinh        | <b>Art Unit</b><br>3729                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
- 4a) Of the above claim(s) 30-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-26, 28 and 29 is/are rejected.
- 7) ☒ Claim(s) 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's election of Group I, claims 21-29 in the reply filed on 7/8/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Thus, claims 30-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/8/04.

An Office action on the merits of claims 21-29 as follows:

#### ***Specification***

2. The abstract of the invention should have been revised to indicate the method invention.

#### ***Claim Objections***

3. "conductive" (claim 21, line 12) should have been:-- conductive layers--.  
Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21-26, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwong et al (6,388,890) in view of Takagi et al (4,800,459).

Kwong et al discloses a method for reducing impedance with in a reference path in a PCB comprising steps of: forming PCB comprising a plurality of conductive layers (12, 14, 16 and 18), wherein one of the conductive layers is a first layer 16a, a second layer 16d, having at least two or more vias 20, 22, 24 and 26 interconnecting two or more conductive layers of said conductive layers, wherein the first and the two or more vias is part of a signal path configured to carry said signal from said first layer to said second layer, wherein a second of the two or more vias is a part of a reference path of a reference path configured to carry said signal from a third to a fourth conductive layer (see Fig. 1, and the discussed at col. 4, lines 10-44). However, Kwong et al reference is silent about the embedding an electrical component in said second of said two or more vias between two conductive layers of said plurality of conductive layers. Takagi et al disclose the method features described above (see Fig. 3, and abstract, lines 1-10). Therefore, it would have been obvious to one ordinary having skill in the art at the time the invention was made to employ the Takagi 's teaching of embedding component within the via of the substrate into the invention of Kwong et al in order to form a desired structure which meet manufacturing requirements.

As applied to claims 22-24, Kwong as modified and relied above discloses the component is a capacitor and the configuration set forth in the claims 23-24 (see Takagi's Fig. 3 and the discussed at col. 5).

As applied to claims 25-26, and 28-29, it would have been an obvious matter of design choice to choose any desired shape and configuration requirement for the associated component including features recited in the above claims since applicant has not disclosed that these features are critical, patentably distinguishing features and it appears that the invention would perform equally well with the configuration as shown in the prior art reference (see Takagi's Figs 1 and 3).

***Allowable Subject Matter***

6. Claim 27 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim 21 and any intervening claims.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited prior art references for their teaching of circuit substrate having vias that contain component.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Trinh whose telephone number is (571) 272-4569. The examiner can normally be reached on Monday -Thursday 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



M. Trinh 12/23/04  
Primary Examiner Group 3729

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